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moved the remaining 11-square, 4-7-11 will be found made up of two 4-squares and two overlapping 7-squares with middle 3-square, all magic. Within this is a volunteer 7-square, of which we must not expect too much, but its six middle rows and two diagonals are correct, and the corner 2×2 blocks pertaining to the 4-squares although not composed of actual couplets have the value thereof, $224 + 228$. However, without those blocks we have two overlapping 5-squares all right. By the way, these 4-squares have a very high degree of magic, like those shown in Fig. 6, with their 2-squares and 3-squares so curiously overlapping. Indeed, this recent study had its origin some years ago from observing these special features of the 4-square at its best state. The same traits were recognized in the 8's and other congeners; also some remarkable results found in the oddly-even squares when filled by current groups, as well as in the quartered squares, led gradually to the general scheme of overlapping squares as here presented. Other investigators may have been working consciously or unconsciously on similar lines, but perhaps not to a great extent. It will be observed that the sections of Fig. 8 have a resemblance to some curious modifications of the concentric square, devised by Mr. Frierson (Andrews, p. 183). This is not merely a chance coincidence, nor an imitation, but doubtless there was a suggestion of possibilities. Without raising any question of originality or priority of invention it may be claimed that here the purpose and the conditions of the combination were quite different, the materials more extensive, and the methods of construction probably not exactly the same.

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THE BAGPIPE NOT A HEBREW INSTRUMENT.

In the course of an interesting article on "Music in the Old Testament," written for *The Monist*, April, 1909, Professor Carl Heinrich Cornill, of Breslau, makes the following statement:¹

"This 'ugab is most probably the same as the bagpipe, which is of course a very primitive and widely spread instrument, familiar to us as the national instrument of the Scotch, and best known in continental Europe as the *pifferari* of Italy."

As a matter of fact, however, it is not possible to say what manner of musical instrument is referred to in the Old Testament

¹ C. H. Cornill, *loc. cit.*, p. 251.

under the name 'ūgāb. The word occurs only four times.² Except in so far as it is defined as the name of a musical instrument, no consistent explanation is given by the mediæval commentators. Abraham di Porta Leone (1612), in the Shiltē-haggibbōrim, goes so far as to identify it with the *viola da gamba* of his own day, an identification which cannot, of course, be accepted, for the reason that the principle of bowed instruments was unknown to the Hebrews. To go back to an earlier source, it appears that nothing definite can be derived from the evidence of the Greek and Latin translations of the Bible,—the word being thus variously rendered:

Gen. iv. 21,	LXX	κιθάρα	Vulg. <i>organum</i> . ³
Job xxi. 12	"	ψαλμός	" <i>organum</i> .
Job xxx. 31	"	ψαλμός	" <i>organum</i> .
Ps. cl. 4,	"	ὄργανον	" <i>organum</i> .

There is no evidence whatever that it was a bagpipe.

An explanation to this effect has, however, found its way into encyclopedias and commentaries. Its source has lately been traced⁴ to a misunderstanding, complicated further by inaccurate references, of a note in Winer's *Realwörterbuch*,⁵ that a Hebrew version of the Aramaic parts of the book of Daniel has in iii. 5 'ūgāb for *sūmpōnyāh*.⁶ The date of this version which is found in a manuscript of 1327, is uncertain; it contains, beside other errors, the obvious mis-translation, *sabbeka* = *hālil*,⁷ so that it is of doubtful value, to say the least.⁸

Of the meaning of *sūmpōnyāh*, in Daniel iii. 5, there is no doubt. It is the name of the bagpipe, and indeed the only name by which

² Gen. iv. 21; Job. xxi. 12; xxx. 31; Ps. cl. 4.

³ The English A. V., following St. Jerome, has "organ," R. V. reads "pipe," following the Aramaic Targums, which render 'ūgāb always by 'ābūbā, "a pipe."

⁴ G. F. Moore, in *Journal of Biblical Literature*, xxiv, part ii, 1905, pp. 169-171. The author has rendered a valuable service to the world of scholarship in tracing this misinterpretation to its source.

⁵ G. B. Winer, *Biblisches Realwörterbuch*, Leipsic, 1849.

⁶ Winer, *loc. cit.*, vol. ii, p. 123, s. v. "Musikalische Instrumente": (a) עֲנַבִּי Gen. iv. 21; Hiob xxi. 12.a, nach den jüdischen Interpreten, Chald. und Hieron. die Sackpfeife, Dudelsack, und (b) חֲלִילִים chald. Dan. iii. 5; x. 15, συμφωνία. Polyb. bei Athen. x. 439, wohl eben dasselbe, wie denn die hebr. Uebersetzung dafür עֲנַבִּי hat.

⁷ *Sabbeka*, σαμβύκη, a stringed instrument; *hālil*, a flute.

⁸ The author has wisely excluded the four instruments mentioned in Daniel iii. 5, *kitharos*, *sabbeka*, *psantērin*, and *sūmpōnyāh*, from his discussion of ancient Hebrew music.

it is known in the Old Testament. The name is a loanword from the Greeks, who knew the bagpipe as *συμφωνία*,⁹ and passed the word in this sense on to the Romans, by whom it has been transmitted to the Romance tongues. To-day *zampogna*, the Italian derivative, is the common word for bagpipe among the peasants of Italy,—the *pifferari*, who throng at Christmas time to the cities and play on their pipes (*pifferi*) and bagpipes (*zampogne*) before the street shrines of the Virgin. In Spain, Provence, Roumania, Greece and Hungary, the bagpipe is still called by names derived from *symphonia*—the Greek word has come back into the language in the form *τζαμπόρνα*.¹⁰

It is true that, with the exception of the Pan's pipe, found in the New World as well as the Old, scarcely any instrument has come into general usage over so wide an extent of territory as the bagpipe. The ancient Greeks knew it,¹¹ the emperor Nero counted bagpiping among his accomplishments.¹² There remains, however, no evidence that the Hebrews knew it previous to the time of Antiochus Epiphanes.

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CREDULITY, INCREDULITY, AND IMMORTALITY.

How much may be legitimately asserted as proved with regard to the relations of consciousness and matter? To simplify the question, let us, for the sake of argument, ignore all the claims of psychical research on behalf of the spiritualist hypothesis. Let us assume that we have absolutely no conclusive scientific evidence of the existence of consciousness apart from matter. Let us assume that, in every recorded instance, consciousness has invariably been found in association with matter. What then is our logical position? Is it proved that it is impossible for consciousness to exist apart from matter? Most emphatically not!

And yet, a discussion on Immortality* reveals the remarkable fact that three eminent persons, Professor Ernst Haeckel, famous

⁹ Polybius XXVI, 1; XXX, 26. Cf. LXX, Dan. iii. 5; Luke xv. 25.

¹⁰ See my article, Daniel iii. 5,—*sümpönyäh*,—in *Journal of Biblical Literature*, XXVII, part II, 1908, pp. 111-121.

¹¹ Aristophanes, *Acharnians*, 862-66.

¹² Suetonius, *Nero*, 54. Cf. Dio Chrysostom, *Orat.* LXXI, p. 381, Reiske.

* See *Open Court*, Vol. XIX, p. 363.